

## ABSTRACT OF THE DISCLOSURE

The invention combines the repeater functions outlined in the IEEE 802.3 Standards, §27, and the 100BASE-TX PCS and PMA. The disclosed FEMR provides four ports in the PQFR packet of its 100 pins. Such extension ports allow multiple serial connections  
5 of the FEMR's, increasing the number of all ports on the repeaters. Therefore, the price of each repeater can be reduced to its minimum, and the serial device does not need an external logic circuit. Additionally, the serial device also supports the extension among built-in inter-repeaters used in stackable backplanes.

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